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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,112	06/14/2001	Toshio Sato	209401US-2	6647
22850	7590	03/01/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			CADUGAN, ERICA E	
			ART UNIT	PAPER NUMBER
			3722	9

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/880,112

Applicant(s)

SATO ET AL.

Examiner

Erica E Cadugan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,6 and 11 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 7-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claims 1-2, 7, and 10 are objected to because of the following informalities: in claim 1, in lines 11-12, it appears that the phrase “to elastically connect said transfer table to elastically connect said transfer table” should be changed to --to elastically connect said transfer table--. Also, in claim 2, line 13, it appears that “is engage” should be --is engaged--. Also, in claim 7, line 3, it appears that “with and separate” should be --with and is separate--. Also, in claim 7, line 4, it appears that a comma should be inserted after “member” for clarity. Also, in claim 10, line 3, it appears that --is-- should be inserted prior to “separate”, and it also appears that in line 4, a comma should be inserted after “member”. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,442,725 (Urabe), or over Urabe in view of Applicant's Admitted Prior Art (AAPA).

Urabe teaches an electric actuator for linearly driving a workpiece fixed between head 10 and tail stocks 11 (see Fig. 1). The actuator includes a feed screw 2 rotatably supported by bearing brackets 3a, 3b on bed or “base” 1 (Fig. 1). Additionally, feed nut 7 reciprocates in the axial direction of the feed screw by forward and reverse actuation of the feed screw 2, driven in rotation by reversible DC servo motor 4 (col. 1, lines 39-51, Fig. 1). The nut 7 is coupled via

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screws 14 to sliding or “transfer” table 8 such that the table 8 reciprocates with the nut 7 (Fig. 1). Note that the motor 4 is connected to the feed screw 2 by gears 5, 6, constituting a “transmission mechanism”. Additionally note that springs 22 and 25 are “disposed between” the nut 7 and the table 8. Further note that if, for example, the table 8 was driven to the left as viewed in Figure 1 until the heads of screws 21 abutted the bearing bracket 3a, it appears that if the motor continued to drive the feed screw 2 and nut 7 that, due to the compression of springs 22, the nut would continue to move leftward as viewed in Fig. 1 (relative to the stationary member 20 and ultimately the stationary table 8). Thus, it appears that the device as shown in Fig. 1 functions as claimed, (e.g., to “allow said nut member to overrun, to allow said stepping motor to excessively rotate in a cushioned manner”, etc.).

However, while Urabe does specify that the motor 4 is a “DC servo motor” (col. 2, line 35), Urabe does not explicitly teach that the motor is a “stepping motor” as claimed.

However, the benefits of “stepping motors” are well-known, and as such, one possessing ordinary skill in the art would be expected to utilize such drive motor means as an obvious choice of design to achieve the well-known benefits that accrue thereto such as enhanced rotative feed screw control and more precise translation of the table.

Also/alternatively note that in the previous office action, Examiner asserted that the benefits of “stepping motors” such as “enhanced rotative feed screw control and more precise translation of the table” were “well-known”. This assertion is taken to be admitted prior art because Applicant did not traverse the Examiner’s assertion. See MPEP section 2144.03, section C, for example. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted

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a stepping motor, the benefits of which are “well-known” as admitted by applicant, for the motor taught by Urabe, for the achieving the well-known benefits of “enhanced rotative feed screw control and more precise translation of the table”, for example.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Urabe (or Urabe in view of AAPA) as applied to claim 1 above, and further in view of U.S. Pat. No. 4,653,408 (Nagashima et al.).

Urabe (or Urabe in view of AAPA) teaches all aspects of the claimed invention as described in the above rejection based thereon, but does not explicitly teach the claimed “measuring means”.

Nagashima et al. teaches the use of displacement detectors 14, 15, shown in Fig. 8.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided “measuring means” such as those taught by Nagashima et al. to the device of Urabe for the purpose of increasing the accuracy of Urabe’s device, for example by providing feedback to a control device (see Nagashima, col. 5, lines 10-28, for example).

5. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 2,368,408 (Brooking) (or Brooking in view of Applicant’s Admitted Prior Art, hereinafter AAPA).

Brooking teaches a linear actuator for linearly moving a carriage or “table” 3 (Fig. 1) in the linear left/right direction as viewed in Fig. 1. The actuator includes a feed screw 12 whose ends are supported by some structure (see Fig. 1), which structure is considered the claimed “bearing member”(s). Additionally, feed nut 20 reciprocates in the axial direction of the feed

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screw by forward and reverse actuation of the feed screw 12, driven in rotation by reversible motor 14 (page 1, lines 45-50, Fig. 1). The nut 20 is coupled via bolts 23 to the rear end of the carriage 3 (page 2, lines 1-25, Figures 1-2) such that the carriage 3 reciprocates with the nut 20 (Fig. 1). Note that the motor 14 is connected to the feed screw 12 by belt/pulley unit 15, which constitutes the claimed “transmission mechanism”. Additionally note that springs 24 are “disposed between” the nut 20 and the carriage 3. Further note that when the carriage 3 abuts the stop screw 44, thus reaching the “transfer end”, the feed screw 12 and nut 20 are continued to be driven by the motor 14, and that relative movement in the direction of the feed screw between the nut 20 and the carriage 3 occurs as the springs 24 are compressed (see Figs. 1-2 and page 2, lines 1-19 and 46-59).

Additionally, it is noted that the limitation “to transfer a workpiece” (claim 1, line 6) is an intended use or functional-type limitation. Note that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the instant case, there appears to be no reason why a workpiece could not be mounted for transfer on the carriage 3, for example, once the machining was complete, the carriage is capable of supporting a finished workpiece for transfer to the opposite side of the machine, or oppositely, the carriage is capable of supporting a blank workpiece for transfer to the side of the machine where the chuck 9 is located, for example.

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However, while Brooking does specify that the motor 4 is a “reversible electric motor” as described previously, Brooking does not explicitly teach that the motor is a “stepping motor” as claimed.

However, the benefits of “stepping motors” are well-known, and as such, one possessing ordinary skill in the art would be expected to utilize such drive motor means as an obvious choice of design to achieve the well-known benefits that accrue thereto such as enhanced rotative feed screw control and more precise translation of the carriage.

Also/alternatively note that in the previous office action, Examiner asserted that the benefits of “stepping motors” such as “enhanced rotative feed screw control and more precise translation of the table” were “well-known”. This assertion is taken to be admitted prior art because Applicant did not traverse the Examiner’s assertion. See MPEP section 2144.03, section C, for example. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted a stepping motor, the benefits of which are “well-known” as admitted by applicant, for the motor taught by Brooking, for the achieving the well-known benefits of “enhanced rotative feed screw control and more precise translation” of the carriage, for example.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brooking (or Brooking in view of AAPA) as applied to claim 1 above, and further in view of U.S. Pat. No. 4,653,408 (Nagashima et al.).

Brooking (or Brooking in view of AAPA) teaches all aspects of the claimed invention as described in the above rejection based thereon, but does not explicitly teach the claimed “measuring means”.

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Nagashima et al. teaches the use of displacement detectors 14, 15, shown in Fig. 8.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided "measuring means" such as those taught by Nagashima et al. to the device of Brooking for the purpose of increasing the accuracy of Brooking's device, for example by providing feedback to a control device (see Nagashima, col. 5, lines 10-28, for example).

***Allowable Subject Matter***

7. Claims 2-4 and 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening-claims (and-if-the-above-claim-objections-are-corrected).

***Response to Arguments***

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Faxing of Responses to Office Actions and Contact Information***

10. In order to reduce pendency and avoid potential delays, TC 3700 is encouraging FAXing of responses to Office Actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner

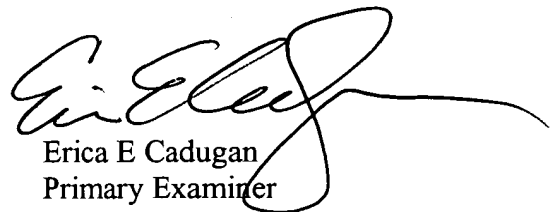


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and art unit at the top of your cover sheet. Papers submitted via FAX into TC 3700 will be promptly forwarded to the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica Cadugan whose telephone number is (703) 308-6395. The examiner can normally be reached on Monday through Thursday from 7:30 a.m. to 5:00 p.m., and every other Friday from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached at (703) 308-2159. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 3700 receptionist whose telephone number is (703) 308-1148.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erica E Cadugan  
Primary Examiner  
Art Unit 3722

eec  
February 25, 2004